

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for the catalytic hydrodealkylation alone of hydrocarbons comprising C₈-C₁₃ alkylaromatic compounds, optionally mixed with C₄-C₉ aliphatic and cycloaliphatic products, which comprises treating said hydrocarbon compositions, in continuous and in the presence of hydrogen, with a catalyst consisting of a ZSM-5 zeolite, having an Si/Al molar ratio ranging from 5 to 35, modified with at least one metal selected from the group consisting of those belonging to groups IIB, VIB, VIII, at a temperature ranging from 400 to 650°C, a pressure ranging from 2 to 4 MPa and an H₂/charge molar ratio ranging from 3 to 6.

Claim 2 (Currently Amended): The process according to claim 1, wherein the hydrodealkylation reaction takes place at temperatures ranging from 450 to 580°C, pressures ranging from 2.8 to 3.6 MPa, H₂/charge molar ratios ranging from 3.8 to 5.2, and with flow-rates of the reagents which are such as to guarantee an LHSV (Liquid Hourly Space Velocity), calculated, with respect to the hydrocarbon stream, ranging from 3 to 5 h⁻¹, preferably 3.5 to 4.5 h⁻¹.

Claim 3 (Currently Amended): The process according to claims 1-and-2, wherein the hydrocarbon charge subjected to hydrodealkylation comprises C₈-C₁₃ alkylaromatic compounds selected from the group consisting of ethylbenzene, xylenes, propylbenzenes, ethyltoluenes, trimethylbenzenes, diethylbenzenes, ethylxylenes, tetramethylbenzenes, propyltoluenes, ethyltrimethylbenzenes, triethylbenzenes, and dipropyltoluenes.

Claim 4 (Original): The process according to claim 3, wherein the C₈-C₁₃ alkylaromatic hydrocarbon charge comes from reforming units or from units effecting pyrolytic processes, or from steam cracking.

Claim 5 (Currently Amended): The process according to ~~claims 1-4~~ claim 1, wherein the hydrocarbon charge subjected to hydrodealkylation comprises C₈-C₁₃ alkylaromatic compounds, optionally mixed with C₄-C₉ aliphatic and cycloaliphatic products and organic compounds containing hetero-atoms.

Claim 6 (Currently Amended): The process according to ~~claims 1-5~~ claim 1, wherein the catalyst consists of a ZSM-5 zeolite in bound form, with binders selected from the group consisting of aluminas, ~~among which pseudo-bohemite and γ alumina; clays, among which kaolinite, smectites, montmorillonites; silica; alumino-silicates; titanium and zirconium oxides; and their mixtures with zeolite/binder weight ratios ranging from 100/1 to 1/10.~~

Claim 7 (Currently Amended): The process according to ~~claims 1-6~~ claim 6, wherein the ZSM-5 catalyst/binder is modified with at least one metal selected from the group consisting of those belonging to groups IIB, VIB, and VIII.

Claim 8 (Currently Amended): The process according to ~~any of the previous claims~~ claim 7, wherein the metal ~~belonging to groups IIB, VIB and VIII,~~ is selected from the group consisting of molybdenum, zinc, nickel, cobalt, palladium, and their mixtures.

Claim 9 (Original): The process according to claim 8, wherein the metal is molybdenum.

Claim 10 (Currently Amended): The process according to ~~any of the previous claims~~ claim 1, wherein the ZSM-5 zeolite is characterized by an Si/Al molar ratio ranging from 15 to 30.

Claim 11 (Currently Amended): The process according to ~~any of the previous claims~~ claim 1, wherein the dispersion of metals on the catalyst can be carried out according to techniques selected from impregnation, ion exchange, ~~vapour~~ vapor deposition or surface adsorption.

Claim 12 (Currently Amended): The process according to ~~any of the previous claims~~ claim 1, wherein the ZSM-5 zeolite as such or in bound form is impregnated with metals of groups IIB, VIB and VIII according to methods which comprise:

- preparing one or more solutions of metal compounds to be carried on a medium;
- impregnating the zeolite with the above solutions;
- drying the zeolite thus impregnated;
- calcining the impregnated and dried zeolite, at temperatures ranging from 400 to 650°C; and
- optionally repeating the previous steps once or several times.

Claim 13 (Currently Amended): The process according to claim 12, wherein the dispersion of metals on the catalyst takes place by impregnation with an aqueous or aqueous-organic solution, with the organic solvent selected from the group consisting of alcohols, ketones, and nitriles, or and their mixtures, containing at least one hydro- or organo-soluble

compound of the metal in such concentrations that the total final content of the metal in the catalyst ranges from 0.1 to 10% by weight.

Claim 14 (Currently Amended): The process according to ~~any of the previous claims~~ claim 1, wherein the total content of the metal in the catalyst ranges from 0.5 to 8% by weight.

Claim 15 (New): The process according to claim 2, wherein the LHSV ranges from 3.5 to 4.5 h⁻¹.

Claim 16 (New): The process according to claim 6, wherein the aluminas are selected from the group consisting of pseudo-bohemite and γ -alumina.

Claim 17 (New): The process according to claim 6, wherein the clays are selected from the group consisting of kaolinite, smectites, montmorillonites.